IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Mallikarjun Chadalapaka	§	Conf. No.:	8720
		§		
Serial No.:	10/666,174	§	Examiner:	Thomas J. Dailey
		§		
Filed:	September 18, 2003	§	Art Unit:	2152
		§		
For:	Method and Apparatus for Acknowledging a Request for Data Transfer	§	Atty. Dkt. No.:	200312982-1 (HPC.0563US)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1-25 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Hewlett-Packard Development Company, LP. The Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 11445 Compaq Center Drive West, Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-25 have been finally rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendment after the final rejection of December 9, 2010 has been submitted. Therefore, all amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element. Note also that the cited passages are provided as examples, as other passages in the specification or drawings not cited may also be relevant to the corresponding claim elements.

Independent claim 1 recites an apparatus for acknowledging a data transfer, comprising:

a processor configured to transfer data according to a plurality of protocols of a protocol stack (Fig. 3:308, 322; Spec., p. 8, ¶ [0020], ln. 1 – p. 10, ¶ [0023], ln. 8), the protocol stack comprising:

a first protocol layer (Fig. 3:310, 324) to initiate a request for a data transfer (Spec., p. 12, ¶ [0027], ln. 1-5); and

a second protocol layer (Fig. 3:312, 326) to:

receive the request for the data transfer from the first protocol layer (Spec., p. 15, ¶ [0033], ln. 1-7);

determine whether the request for the data transfer contains a request for acknowledgement of completion of the data transfer (Spec., p. 15, ¶ [0034], ln.1-11);

send a performance request corresponding to the request for data transfer to a third protocol layer (Spec., p. 19, ¶¶ [0041], ln. 1 -[0042], ln. 11); and

if the request for data transfer does contain a request for acknowledgement of the completion of the data transfer, set a variable in memory to wait for an event corresponding to the completion of the request for data transfer and send an acknowledgement to the first protocol layer upon the occurrence of the event (Spec., p. 17, ¶ [0038], ln. 5-9; p. 18, ¶ [0040], ln. 1-9).

Independent claim 8 recites a network arrangement, comprising:

a plurality of systems (Fig. 3:302, 304), at least one of the plurality of systems comprising a protocol stack (Fig. 3:308, 322) and a process (Fig. 3:306, 332, Spec., p. 8, ¶ [0020], ln. 1 - p. 10, ¶ [0024], ln. 5);

at least one input/output device (Fig. 1:126, 130, 134, 138; Spec., p. 6, ¶ [0013], ln. 5-7);

a network (Fig. 1:118) that connects the plurality of systems and the at least one input/output device for communication (Spec., p. 7, ¶ [0017], ln. 1-9); and

wherein the protocol stack comprises:

a first protocol layer (Fig. 3:310, 324) to interact with a consumer(Spec., p. 9, ¶ [0021], ln. 1-19);

a second protocol layer (Fig. 3:312, 326) to:

receive a data exchange request from the first protocol layer (Spec., p. 15, ¶ [0033], ln. 1-7), wherein the data exchange request is a request to initiate a data transfer;

examine the data exchange request to determine if an acknowledgement request is indicated (Spec., p. 15, ¶ [0034], ln. 1-11);

send a performance request corresponding to the data exchange request to a third protocol layer (Spec., p. 19, ¶¶ [0041], ln. 1 -[0042], ln. 11); and

if the data exchange request contains the acknowledgement request, set a variable in memory to wait for an event that corresponds to a completion of the performance request and send an acknowledgement to the first protocol layer upon the occurrence of the event (Spec., p. 17, ¶ [0038], ln. 5-9; p. 18, ¶ [0040], ln. 1-9).

Independent claim 16 recites a method of acknowledging a data transfer, the method comprising:

transferring, by a processor, data according to a plurality of protocols (Spec., p. 8, ¶¶ [0019], ln. 1 - [0020], ln. 8);

receiving, from a first protocol layer by a second protocol layer, a request for initiating a data transfer (Spec., p. 15, ¶ [0033], ln. 1-7);

determining, by the second protocol layer, whether the request for initiating the data transfer contains a request for acknowledgement of completion of the data transfer (Spec., p. 15, ¶ [0034], ln. 1-11);

sending, by the second protocol layer, a performance request corresponding to the request for initiating the data transfer according to a third protocol layer (Spec., p. 19, ¶¶ [0041], ln. 1 - [0042], ln. 11); and

if the request for data transfer does contain a request for acknowledgement of completion of the data transfer, the second protocol layer setting a variable in memory to wait for an event corresponding to completion of the data transfer and sending an acknowledgement to the first protocol layer upon the occurrence of the event (Spec., p. 17, ¶ [0038], ln. 5-9; p. 18, ¶ [0040], ln. 1-9).

Claim 22, set forth below, includes means plus function elements, which are identified as required by 37 C.F.R. § 41.37. For each means plus function element, the structure, material, or acts described in the Specification as corresponding to each claimed function is set forth by reference to page and line number, and to the drawings, by reference characters.

Independent claim 22 recites an apparatus for acknowledging a data transfer, comprising:

a processor;

means (Fig. 3:312, 316) executable on the processor for receiving a request for initiating a data transfer according to a first protocol (Spec., p. 15, ¶ [0033], ln. 1-7);

means (Fig. 3:312, 316) executable on the processor for determining whether the request for initiating the data transfer contains a request for acknowledgement of completion of the data transfer according to a second protocol (Spec., p. 15, ¶ [0034], ln. 1-11);

means (Fig. 3:312, 316) executable on the processor for sending a performance request corresponding to the request for initiating data transfer according to a third protocol (Spec., p. 19, ¶¶ [0041], ln. 1 - [0042], ln.11); and

means (Fig. 3:312, 316) executable on the processor for setting a variable in memory to wait for an event to correspond to the completion of the performance request and for sending an acknowledgement according to the first protocol upon the occurrence of the event if the request for initiating the data transfer does contain the request for acknowledgement of completion of the data transfer (Spec., p. 17, ¶ [0038], ln. 5-9; p. 18, ¶ [0040], ln. 1-9).

Independent claim 23 recites a computer storage medium storing a program for acknowledging a data transfer, the program executable on a processor node and comprising:

first protocol code (Fig. 3:310, 324) for performing a first protocol stored on the computer storage medium for generating a request for initiating a data transfer (Spec., p. 12, ¶ [0027], ln. 1-5); and

second protocol code (Fig. 3:312, 326) for performing a second protocol stored on the computer storage medium for:

receiving the request for initiating the data transfer from the first protocol code (Spec., p. 15, ¶ [0033], ln. 1-5);

determining whether the request for initiating the data transfer contains a request for acknowledgement of completion of the data transfer (Spec., p. 15, ¶ [0034], ln. 1-7);

sending a performance request corresponding to the request for initiating data transfer to a third protocol code (Spec., p. 19, ¶¶ [0041], ln. 1 - [0042], ln. 11); and

setting a variable in memory to wait for an event corresponding to the completion of the performance request and sending an acknowledgement to the first protocol code upon the occurrence of the event if the request for data transfer does contain a request for acknowledgement of completion of the data transfer (Spec., p. 17, ¶ [0038], ln. 5-9; p. 18, ¶ [0040], ln. 1-9).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Wendt (Data Integrity PowerPoint Presentation entitled "ISCSI-R Data Integrity") in view of Satran (Internet Draft entitled "iSCSI").

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

A. Claims 1-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over Wendt (Data Integrity PowerPoint Presentation entitled "ISCSI-R Data Integrity") in view of Satran (Internet Draft entitled "iSCSI").

1. Claims 1-6, 24.

It is respectfully submitted that the obviousness rejection of independent claim 1 over Wendt and Satran is in error.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as held by the U.S. Supreme Court, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

Here, even if Wendt and Satran could be hypothetically combined, the hypothetical combination of these references would not have disclosed or hinted at all elements of claim 1. The Examiner conceded that Wendt fails to disclose the following elements of claim 1:

- determine whether the request for the data transfer contains a request for acknowledgement of completion of the data transfer;
- if the request for data transfer does contain a request for acknowledgement of the completion of the data transfer, set a variable in memory to wait for an event corresponding to the completion of the request for data transfer and send an acknowledgement to the first protocol layer upon the occurrence of the event.

12/9/2009 Office Action at 6. However, the Examiner cited Satran as purportedly disclosing the claimed feature missing from Wendt. *Id.* at 6-7. Specifically, the Examiner cited §§ 2.2.1 and 9.7.2 of Satran. Section 2.2.1 of Satran notes that a layering model can include an SCSI layer and an iSCSI layer. Section 9.7.2 of Satran explains that an SCSI Data-in PDU for a read operation can have a format that includes an acknowledge bit. As explained in § 2.5.1.5 of Satran on page 51, the SCSI Data-in PDU is used for carrying SCSI data payload between an initiator and a target.

Providing an acknowledgement in an SCSI Data-in PDU, as taught by Satran, has nothing to do with determining whether a **request** for data transfer (**initiated** by a first protocol layer) contains a request for acknowledgement of completion of the data transfer. As specifically taught by Satran in § 9.7.2, a **target** sets the acknowledge bit of the SCSI Data-in PDU to a value "1" to indicate that the target requests a positive acknowledgement from the initiator for data received. A target of a data transfer operation setting an acknowledgement in a data payload PDU (Data-in PDU) is completely different from a first protocol layer initiating a request for a data transfer, where such request for data transfer contains a request for acknowledgement of completion of data transfer, as recited in claim 1.

The Response to Arguments section of the Final Office Action responded to the foregoing arguments by stating that "one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." 12/9/2009 Office Action at 3. This characterization of Appellant's arguments is incorrect. Appellant was properly rebutting an assertion made by the Examiner in the rejection. Specifically, the assertion made by the Examiner is that Satran discloses claimed subject matter specifically conceded by the Examiner to be missing from Wendt. Appellant provided detailed reasons regarding why Satran fails to disclose or hint at the subject matter that was conceded to be missing from Wendt.

The Response to Arguments section argued that the "Satran reference cures [Wendt's] deficiencies by disclosing an acknowledgement bit (i.e. A bit) at the first protocol layer of the Wendt reference (the iSCSI layer), in the same manner that is taught by the instant application (compare, applicant's specification page 15, [0033] (where iSCSI is also the application/first layer protocol) with the Satran disclosure of page 156, section 9.7.2, 'A (Acknowledge) bit', first paragraph, 'For sessions with ....')." *Id.* While it is true that the present application discloses a iSCSI layer, and Wendt discloses an iSCSI layer, that is where the similarity ends.

Claim 1 specifically recites that the request for the data transfer (received by the second protocol layer from the first protocol layer) contains a request for acknowledgment of completion of the data transfer. There is absolutely no hint that any request sent from the iSCSI layer to the iSER layer of Wendt contains any request for acknowledgment of completion of the data transfer.

The secondary reference, Satran, clearly does **not** cure the deficiency of Wendt, since Satran specifically teaches that a target of a data transfer operation sets an acknowledgment in a **data payload PDU** (Data-in PDU). Such specific teachings of Satran cannot be ignored when

rendering an obviousness rejection. Satran clearly would not have led a person of ordinary skill in the art to incorporate an acknowledgment bit into any request sent from the iSCSI layer to the iSER layer in Wendt—rather, Satran would have led a person of ordinary skill in the art to incorporate an acknowledgment bit into a data payload PDU, by the target of a data transfer operation.

Therefore, even if Wendt and Satran could be hypothetically combined, the hypothetical combination of the references would not have led to the subject matter of claim 1.

Moreover, no reason existed that would have prompted a person of ordinary skill in the art to combine the teachings of Wendt and Satran to achieve the claimed subject matter. Wendt discloses various PowerPoint slides relating to iSCSI-R data integrity, with slide 3 showing various layers that can be present in an initiator, a storage gateway, and a target. However, Wendt provides absolutely no hint whatsoever of including an acknowledgement of completion of data transfer in a request for the data transfer that is initiated by a first protocol layer, as recited in claim 1. Satran similarly provides no hint of providing such a request for acknowledgement in a request for data transfer initiated by a first protocol layer, as Satran merely discloses that a target can set an acknowledgement in a data payload PDU to request that an initiator acknowledge data received.

Incorporating an acknowledgment bit into a data payload PDU by a target of a data transfer operation is completely different from incorporating a request for acknowledgment of completion of data transfer into a request for the data transfer, where the request is received by a second protocol layer from a first protocol layer.

Consequently, a person of ordinary skill in the art would not have been prompted to combine the teachings of Wendt and Satran to achieve the claimed subject matter. In response to

the foregoing, the Examiner argued that no reason has to be provided to combine teachings of Wendt and Satran, citing *KSR*. 12/9/2009 Office Action at 4. This statement is legally incorrect. *KSR* specifically holds that it is **important** to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR*, 127 S.Ct. at 1741. The Examiner basically argued that no reason needs to be identified. This allegation clearly indicates that the Examiner has applied the wrong legal standard in the obviousness rejection, and has ignored the specific requirements of *KSR* for establishing a proper obviousness rejection.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claim 1 and its dependent claims is clearly erroneous.

Reversal of the final rejection of the above claims is respectfully requested.

2. Claim 7.

Claim 7 depends from claim 1 and is therefore allowable for at least the same reasons as claim 1. Moreover, claim 7 further recites that the event relates to a zero length RDMA read completion. Note that "the event" recited in claim 7 causes an acknowledgment to be sent from the second protocol layer to the first protocol layer (upon occurrence of such event), as recited in the last clause of base claim 1. With respect to claim 7, the Examiner cited slide 26 of Wendt. 12/9/2009 Office Action at 9. Slide 26 of Wendt shows RDMA read requests sent from the target to the initiator, and read responses sent from the initiator to the target. However, there is no indication or hint that either the read request or the read response on slide 26 of Wendt constitutes a zero length RDMA read completion. Moreover, there is no hint on slide 26, or anywhere else in Wendt, that a zero length RDMA read completion relates to an event the

occurrence of which causes an acknowledgment to be sent from the second protocol layer to the first protocol layer, as claimed.

In view of the foregoing, it is clear that the obviousness rejection of claim 7 is further defective for this additional reason.

Reversal of the final rejection of the above claim is respectfully requested.

3. Claims 8-11, 13-18, 20-23, 25.

Independent claim 8 is allowable for similar reasons as claim 1. Claim 8 recites that a second protocol layer is to receive a data exchange request from the first protocol layer, where the data exchange request is a request to **initiate** a data transfer. Claim 8 further recites that the second protocol layer is to examine the data exchange request to determine if an acknowledgment request is indicated, and that the second protocol layer is to set a variable in memory to wait for an event that corresponds to a completion of the performance request, if the data exchange request (for initiating the data transfer) contains the acknowledgment request. Moreover, claim 8 further recites that the second protocol layer is to send an acknowledgment to the first protocol layer upon the occurrence of the event.

As discussed above in connection with claim 1, neither Wendt nor Satran provides any hint of providing an acknowledgment request in a request to initiate a data transfer. As specifically taught by Satran, a target of a data transfer operation sets an acknowledgment in a data payload PDU, which is completely different from providing an acknowledgment request in a request to initiate a data transfer, as recited in claim 8.

Thus, the hypothetical combination of Wendt and Satran clearly fails to provide any teaching or hint of the subject matter of claim 8. Moreover, for reasons similar to those stated above with respect to claim 1, no reason existed that would have prompted a person of ordinary

skill in the art to combine the teachings of Wendt and Satran to achieve the subject matter of claim 8.

The obviousness rejection of claim 8 and its dependent claims is therefore erroneous. Independent claims 16, 22, and 23 (and respective dependent claims) are allowable for similar reasons as stated above with respect to claims 1 and 8.

Reversal of the final rejection of the above claims is respectfully requested.

4. Claim 12.

Claim 12 depends from claim 8 (indirectly), and is therefore allowable for at least the same reasons as claim 8. Moreover, claim 12 further recites that the message transmitted by a third protocol layer to at least one of a plurality of systems and at least one input/output device is a **zero length** RMDA read message. With respect to claim 12, the Examiner cited slide 26 of Wendt (12/9/2009 Office Action at 10), which shows read requests and read responses. However, there is no hint in Wendt that the read requests or read responses on slide 26, or anywhere else in Wendt, constitute a zero length RDMA read message. Therefore, claim 12 is further allowable for the foregoing reasons.

Reversal of the final rejection of the above claim is respectfully requested.

5. Claim 19.

Claim 19 depends from claim 16 and is therefore allowable for at least the same reasons as claim 16. Moreover, claim 19 further recites that the event is defined to relate to a zero length RDMA read message completion, where "the event" is the event introduced in the last clause of claim 16. In the last clause of claim 16, an acknowledgment to the first protocol layer is sent upon occurrence of the event. For reasons similar to those stated above with respect to claim 7, slide 26 of Wendt clearly provides no hint of the foregoing subject matter of claim 19. Therefore, claim 19 is further allowable for the foregoing reasons.

Reversal of the final rejection of the above claim is respectfully requested.

CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

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VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are:

1. An apparatus for acknowledging a data transfer, comprising:

a processor configured to transfer data according to a plurality of protocols of a protocol stack, the protocol stack comprising:

a first protocol layer to initiate a request for a data transfer; and

a second protocol layer to:

receive the request for the data transfer from the first protocol layer;

determine whether the request for the data transfer contains a request for acknowledgement of completion of the data transfer;

send a performance request corresponding to the request for data transfer to a third protocol layer; and

if the request for data transfer does contain a request for acknowledgement of the completion of the data transfer, set a variable in memory to wait for an event corresponding to the completion of the request for data transfer and send an acknowledgement to the first protocol layer upon the occurrence of the event.

2. The apparatus set forth in claim 1, wherein the first protocol layer is an internet small computer systems interface ("iSCSI") protocol layer.

3. The apparatus set forth in claim 1, wherein the second protocol layer is an internet small computer systems interface extensions for remote direct memory access ("iSER") protocol layer.

4. The apparatus set forth in claim 1, wherein the request for the data transfer comprises an attribute that indicates the request for acknowledgement of completion of the data transfer.

5. The apparatus set forth in claim 4, wherein a value of an error recovery level is notified to the second protocol layer from the first protocol layer.

6. The apparatus set forth in claim 1, wherein the third protocol layer is a remote direct memory access ("RDMA") protocol layer.

7. The apparatus set forth in claim 1, wherein the event relates to a zero length remote direct memory access ("RDMA") read completion.

8. A network arrangement, comprising:

a plurality of systems, at least one of the plurality of systems comprising a protocol stack and a process;

at least one input/output device;

a network that connects the plurality of systems and the at least one input/output device for communication; and

wherein the protocol stack comprises:

a first protocol layer to interact with a consumer;

a second protocol layer to:

receive a data exchange request from the first protocol layer, wherein the data exchange request is a request to initiate a data transfer;

examine the data exchange request to determine if an acknowledgement request is indicated;

send a performance request corresponding to the data exchange request to a third protocol layer; and

if the data exchange request contains the acknowledgement request, set a variable in memory to wait for an event that corresponds to a completion of the performance request and send an acknowledgement to the first protocol layer upon the occurrence of the event.

9. The network arrangement set forth in claim 8, wherein the third protocol layer interacts with the second protocol layer and the third protocol layer is to:

receive the performance request that corresponds to the data exchange request; and

transmit a message to at least one of the plurality of systems and the at least one input/output device via the network.

10. The network arrangement set forth in claim 9, comprising a remote direct memory access network interface card ("RNIC") that is used by the protocol stack to exchange the message between the at least one of the plurality of systems and the at least one input/output device via the network.

11. The network arrangement set forth in claim 9, wherein the message is a remote direct memory access ("RDMA") write message.

12. The network arrangement set forth in claim 9, wherein the message is a zero length remote direct memory access ("RDMA") read message.

13. The network arrangement set forth in claim 8, wherein the second protocol layer is an internet small computer systems interface extensions for remote direct memory access ("iSER") protocol.

14. The network arrangement set forth in claim 8, wherein the data exchange request comprises an attribute and data, the attribute for indicating the acknowledgement request.

15. The network arrangement set forth in claim 8, wherein the process operates according to a small computer systems interface protocol ("SCSI").

16. A method of acknowledging a data transfer, the method comprising:

transferring, by a processor, data according to a plurality of protocols;

receiving, from a first protocol layer by a second protocol layer, a request for initiating a data transfer;

determining, by the second protocol layer, whether the request for initiating the data transfer contains a request for acknowledgement of completion of the data transfer;

sending, by the second protocol layer, a performance request corresponding to the request for initiating the data transfer according to a third protocol layer; and

if the request for data transfer does contain a request for acknowledgement of completion of the data transfer, the second protocol layer setting a variable in memory to wait for an event corresponding to completion of the data transfer and sending an acknowledgement to the first protocol layer upon the occurrence of the event.

17. The method set forth in claim 16, comprising defining the first protocol layer as an internet small computer systems interface ("iSCSI") protocol layer.

18. The method set forth in claim 16, comprising defining the second protocol layer as an internet small computer systems interface extensions for a remote direct memory access ("iSER") protocol layer.

19. The method set forth in claim 16, comprising defining the event to relate to a zero length remote direct memory access ("RDMA") read message completion.

20. The method set forth in claim 16, comprising defining the event to relate to a remote direct memory access ("RDMA") write message completion.

21. The method set forth in claim 16, comprising establishing an error recovery level by the first protocol layer to indicate the error recovery level in the request for acknowledgement of completion of the data transfer.

22. An apparatus for acknowledging a data transfer, comprising:

a processor;

means executable on the processor for receiving a request for initiating a data transfer according to a first protocol;

means executable on the processor for determining whether the request for initiating the data transfer contains a request for acknowledgement of completion of the data transfer according to a second protocol;

means executable on the processor for sending a performance request corresponding to the request for initiating data transfer according to a third protocol; and

means executable on the processor for setting a variable in memory to wait for an event to correspond to the completion of the performance request and for sending an acknowledgement according to the first protocol upon the occurrence of the event if the request for initiating the data transfer does contain the request for acknowledgement of completion of the data transfer.

23. A computer storage medium storing a program for acknowledging a data transfer, the program executable on a processor node and comprising:

first protocol code for performing a first protocol stored on the computer storage medium for generating a request for initiating a data transfer; and

second protocol code for performing a second protocol stored on the computer storage medium for:

receiving the request for initiating the data transfer from the first protocol code;

determining whether the request for initiating the data transfer contains a request for acknowledgement of completion of the data transfer;

sending a performance request corresponding to the request for initiating data transfer to a third protocol code; and

setting a variable in memory to wait for an event corresponding to the completion of the performance request and sending an acknowledgement to the first protocol code upon the occurrence of the event if the request for data transfer does contain a request for acknowledgement of completion of the data transfer.

24. The apparatus as set forth in claim 1, wherein the processor and first, second, and third protocol layers are part of an initiator node to perform the data transfer with a target node.

25. The method as set forth in claim 16, wherein the processor and first, second, and third protocol layers are part of an initiator node to perform the data transfer with a target node.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.